



Autologous Corneal Patch on a Post-Traumatic Corneal Perforation

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Abstract

The surgical management of corneal perforations, particularly in pediatric cases, poses a complex challenge that involves treating the underlying condition and restoring corneal integrity while preserving optical clarity. This case report details the treatment of a 9-year-old child who experienced a corneal perforation due to a metallic foreign body impact, which was treated effectively using an autologous corneal patch technique. Surgical intervention included the removal of the foreign body and placement of the patch, which was secured with 10/0 monofilament sutures. Post-operative management featured antibiotics, atropine, dexamethasone eye drops, and artificial tears, resulting in an improvement of visual acuity to 10/10 after suture removal and sustained structural and functional integrity of the cornea. This case underscores the efficacy of autologous corneal patches in managing small, peripheral corneal perforations in children, offering a viable option that provides satisfactory anatomical and functional outcomes.

Keywords: Ocular trauma, Corneal perforation, Autologous corneal patch, Child, Eye surgery.

Introduction

The surgical treatment of corneal perforations poses a significant challenge for ophthalmologists. Indeed, this management must necessarily combine addressing the underlying pathology and restoring the anatomical integrity of the cornea while preserving its optical qualities as much as possible. The aim is to ensure the best possible functional prognosis for the patient.

Materials and Methods

We report the case of a child, a victim of ocular trauma by the projection of a foreign body, resulting in a corneal perforation treated with an autologous corneal patch.

Results

This is a 9-year-old child with no particular pathological history who presented to the emergency ophthalmology department with a painful red left eye following ocular trauma by the projection of a metallic-appearing foreign body. The ophthalmological examination at admission found a corrected visual acuity of 10/10 in the right eye and 8/10 in the left eye, with a para-axial supero-nasal foreign body accompanied by a 2mm/2mm ulcer in view, a good

anterior chamber, a round regular pupil, a clear lens, and a normal fundus oculi; the examination of the contralateral eye was strictly normal. An OCT of the anterior segment was requested, showing an intrastromal foreign body extending to Descemet's membrane with a corresponding substance loss.

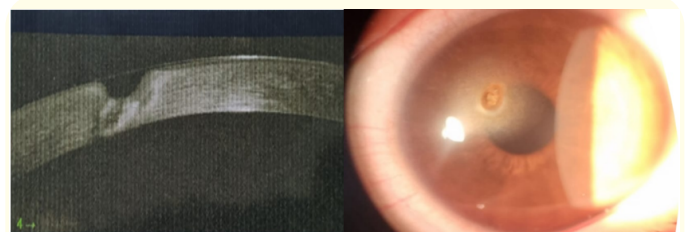


Figure 1

The patient underwent removal of the foreign body and placement of an autologous corneal patch, which was sutured with four stitches using 10/0 monofilament.

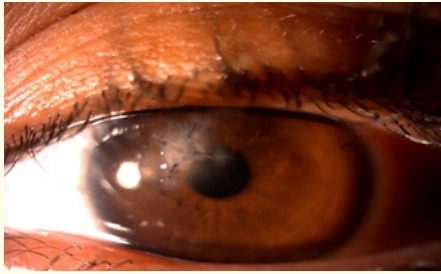


Figure 2

The patient was placed on oral and topical ciprofloxacin, atropine, dexamethasone eye drops, and artificial tears. The examination on postoperative day 1 found visual acuity (VA) at 6/10 with the corneal patch in place, good anterior chamber, dilated round regular pupil, and clear lens. The patient was discharged with close follow-up and suture removal scheduled in 6 weeks. Examination after suture removal found: VA with correction at 10/10, corneal patch in place, good anterior chamber, round regular pupil, and clear lens.

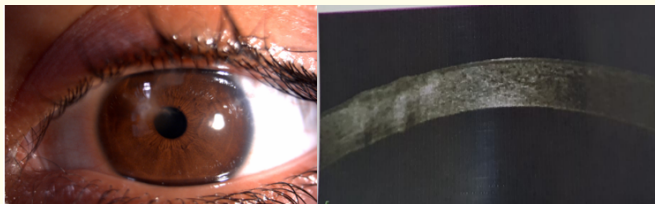


Figure 3

Discussion

The autologous corneal patch is used in peripheral perforations or pre-perforative lesions less than 3 mm in diameter when other techniques are not feasible. The harvesting of the autologous lamellar graft is carried out at the periphery of the cornea of the same eye, in a healthy area, using a crescent knife. Its dimensions should be equivalent to those of the perforation or substance loss. Sutures are performed with 10/0 monofilament. In the literature, the anatomical outcomes of autologous corneal patches were very satisfactory [1-3].

Conclusion

The autologous corneal patch is a useful therapeutic option in certain cases of corneal thinning or in small corneal perforations.

It effectively restores the integrity of the eye and allows for acceptable visual rehabilitation.

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